



Gender Differences in Image-Based Sexual Abuse and Cyberbullying Victimization

Yunhao Hu¹ · Elizabeth Clancy¹ · Bianca Klettke¹

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Abstract

Harmful experiences such as cyberbullying victimization have been associated with the unwanted and non-consensual subset of sexting behaviours known as image-based sexual abuse (IBSA). However, there is little understanding surrounding gender differences in that association. The present study contributes to that understanding through examining gender differences in relationships between IBSA, cyberbullying perpetration, and cyberbullying victimization. Study participants consisted of 1683 young cisgendered adults ($M\ age = 23.15$, $SD = 2.23$, 52.7% women) who completed an anonymous online survey on sexting and harmful online behaviours. Associations between sext sending/receiving and cyberbullying victimization could be largely accounted for by IBSA victimization, but with unique gendered patterns. Specifically, being a victim of non-consensual sext dissemination and receiving unwanted sexts was found to be associated with cyberbullying victimization for women but not for men. Conversely, pressured sexting and receiving unsolicited sexts via AirDrop was associated with cyberbullying victimization for men, but not women. Finally, cyberbullying perpetration predicted cyberbullying victimization for both genders, but had a stronger association for men, suggesting that the impact of IBSA is gendered and nuanced. Future research should explore the social environments in which IBSA victimization occurs and broader gendered behaviours.

Keywords Cyberbullying · Image-based sexual abuse · Young adulthood

Introduction

Innovations in digital communicative technology have fundamentally changed how people access information and navigate their daily lives, in both positive and negative ways. The personal and relational consequences of online use, as well as how accessibility and anonymity might impact online behaviours, have become subjects of great importance. One such behaviour is cyberbullying, defined as an intentional, repeated act of aggression, carried out by a group or individual through an electronic medium, against a victim who cannot easily defend themselves (Smith et al., 2008).

Findings regarding prevalence rates for cyberbullying behaviours vary widely depending on definitions and measurements utilized in research. A systematic review on cyberbullying in adults (Jenaro et al., 2018) found that cyberbullying perpetration rates ranged from 0.56% to 54.3%, while cyberbullying victimization rates ranged from 2.38% to 90.86%. Regarding recent trends, a longitudinal Australian study comparing trends before and during COVID found that while prevalence rates of cyber victimization increased over time (2015–2019), cyberbullying perpetration did not (Trompeter et al., 2022). However, during the early stages of the COVID pandemic in 2020, increases in both cyberbullying victimization and perpetration were observed, although there was no difference in cyberbullying perpetration between 2020 and 2017 and in cyberbullying victimization between 2020 and 2016.

Concerningly, victims of cyberbullying have been found to experience greater symptoms of depression and anxiety, shame, guilt, and suicidal ideation (Bottino et al., 2015; Jenaro et al., 2018; Kowalski et al., 2019; Kwan et al., 2020; Medrano et al., 2018). These consequences occur for

✉ Elizabeth Clancy
elizabeth.clancy@deakin.edu.au
Yunhao Hu
houson.hu@deakin.edu.au
Bianca Klettke
bianca.klettke@deakin.edu.au

¹ School of Psychology, Deakin Cyberpsychology Research Group, Deakin Cyber, Deakin University, Burwood, Australia

adolescents and adults and can impact both perpetrators and victims (Bottino et al., 2015; Jenaro et al., 2018). This is perhaps unsurprising, as research has suggested a bi-directional relationship between cyberbullying and cyberbullying victimization (Dou et al., 2020; Hemphill & Heerde, 2014; Hua et al., 2019; Myers & Cowie, 2019; Tanrikulu & Erdur-Baker, 2021; Zsila et al., 2019).

The association between cyberbullying perpetration and cyberbullying victimization offers a potential explanation for the complex nature of cyberbullying behaviours. Victims of cyberbullying are likely to become perpetrators themselves, either through retaliatory behaviour due to anger or through bullying other victims to redirect their feelings. In turn, perpetrators can become victims as a result of retaliation from their initial targets (Dou et al., 2020; Hemphill & Heerde, 2014; Wang et al., 2019; Zsila et al., 2019). Given the persistence of cyberbullying behaviours and its associated consequences, it is important to better understand the risk factors associated with cyberbullying victimization, improve prevention programs, and protect victims of cyberbullying behaviours.

One such risk factor may be the experiences of unwanted and non-consensual sexting, as prior research has demonstrated that individuals who are subjected to non-consensual sext dissemination or receive unsolicited sexual content are at an increased risk of cyberbullying victimization due to shared vulnerabilities (Burke & Norvilitis, 2020; Gámez-Guadix et al., 2022; Ojeda et al., 2019; van Ouytsel et al., 2021; Wachs et al., 2021). This underscores the broader implications of sexting, particularly when it occurs without consent.

Sexting and Image-Based Sexual Abuse

Sexting is a popular form of online sexual interaction among adolescents and adults, and can be defined as the sending, receiving, or forwarding of sexually explicit content to others through electronic means (Walker & Sleath, 2017). A meta-analytic study found that 38.3% of young adults sent sexts, 41.5% have received sexts, while 47.7% sent and received sexts reciprocally (Mori et al., 2020). Early research conceptualized sexting as a harmful behaviour, similar to harassment (Diliberto & Mattey, 2009) and as a risk factor for cyberbullying victimization, given that shared intimate material could be distributed to third parties and used for intimidation or blackmail (Dake et al., 2012; Gámez-Guadix et al., 2015; Reyns et al., 2013; Woodward et al., 2017).

This conceptualization is problematic, placing responsibility for the behaviour on cyberbullying victims engaged in consensual sexting activity, rather than on the perpetrators of non-consensual behaviours (Döring, 2014; Henry & Powell, 2015; Krieger, 2017; McGlynn & Rackley, 2017). As such, this conceptualisation encourages victim

blaming, minimizes the harm experienced by victims, and downplays perpetrator responsibility (Döring, 2014; McGlynn et al., 2021; Naezer & van Oosterhout, 2021; Walker & Sleath, 2017).

Recent studies have found that the association between sexting and harmful outcomes such as cyberbullying victimization can be explained by the unwanted and non-consensual subset of sexting behaviours (Burke & Norvilitis, 2020; Gámez-Guadix et al., 2022; Klettke et al., 2019; Ojeda et al., 2019; van Ouytsel et al., 2021; Wachs et al., 2021), otherwise known as image-based sexual abuse (IBSA; DeKeseredy & Schwartz, 2016; McGlynn & Rackley, 2017; Powell et al., 2018).

The most prominent of IBSA behaviours is non-consensual sext dissemination, defined as the distribution of intimate, nude, and/or sexually explicit images to audiences other than its intended recipient without the consent of those depicted (Walker & Sleath, 2017). Non-consensual sext dissemination has been associated with harmful behaviours such as cyber-victimization and intimate partner violence (Cornelius et al., 2020; Gámez-Guadix et al., 2022), and is now the subject of legislation in most Western jurisdictions, whether at federal or state levels, including Australia, the United Kingdom, Canada, Ireland, New Zealand, and most states in the USA. For example, in Australia at the national level, the Enhancing Online Safety (Non-consensual sharing of Intimate Images) Bill 2018 introduced provisions for civil penalties for posting or threatening to post intimate images without consent on social media or internet services. Similarly, the UK's Online Safety Act 2023 updated previous legislation with the creation of criminal offenses related to the sharing of intimate images or videos without consent and with intent to cause distress, and can also relate to newer offences such as "deepfakes".

Other problematic forms of IBSA include pressured sexting (e.g., coercion, peer pressure), receiving unwanted sexts (e.g., cyberflashing), and receiving anonymous unsolicited sexts (e.g., via AirDrop). Here, legislative approaches are more varied, with some aspects being covered under more general sexual harassment literature, while others have more recently received specific legislative focus, such as "cyberflashing", which is now recognised under the UK's Online Safety Act 2023. Victims of IBSA have been found to experience negative health consequences similar to those experienced by victims of cyberbullying, including depression, self-harm, and the loss of self-esteem (Bates, 2017; Burke & Norvilitis, 2020; McGlynn et al., 2021; Valiukas et al., 2019; Wachs et al., 2021).

Gender Differences in Cyberbullying Victimization and IBSA

While research into IBSA and cyberbullying victimization is growing (Gámez-Guadix et al., 2022; Henry & Beard, 2024; Pedersen et al., 2023), there is little understanding

surrounding gender differences in the relationship between IBSA and cyberbullying victimization. Cyberbullying and IBSA victimization have been found to impact men and women differently. Meta-analyses suggest men are more likely to engage in cyberbullying perpetration, while women are more likely to experience cyberbullying victimization (Guo, 2016; Sun et al., 2016). This is surprising given the strong bidirectionality in the bully-victim relationship, suggesting the presence of additional factors placing women at greater risk of experiencing cyberbullying victimization. Moreover, studies found that women experienced greater levels of emotional distress (e.g., depressive symptoms) in response to cyberbullying victimization compared to men (Brown et al., 2014; Foody et al., 2019).

Previous findings regarding gender differences in overall sext sending/receiving behaviours are varied; some meta-analytic research found that men were more likely to both send and receive sexts (Mori et al., 2020), while others found no significant gender differences (Madigan et al., 2018; Molla-Esparza et al., 2020). Concerning IBSA victimization, research found that the likelihood of becoming a victim of non-consensual sext dissemination did not differ significantly across genders (Clancy et al., 2020; Madigan et al., 2018; Mussap et al., 2023; Powell et al., 2020; Sciacca et al., 2023; Walker et al., 2021).

However, consequences of victimization were found to be more severe for women than men. For example, women who had their sexts shared without consent were more likely to be confronted with social stigmatisation and blamed for the initial creation or sharing of sexts (McGlynn et al., 2021; Naezer & van Oosterhout, 2021; Walker & Sleath, 2017). Women were also more likely to experience non-consensual sext dissemination in the context of interpersonal harm, such as stalking, sexual assault, and intimate partner abuse (McGlynn et al., 2021; Powell et al., 2020).

Further, studies have shown that women are more likely to experience pressured-sexting and receive unwanted sexts (Klettke et al., 2019; van Ouytsel et al., 2017; Wachs et al., 2021; Walker et al., 2021; Walker & Sleath, 2017). Gender differences were also observed in the impact of unwanted and pressured sexting, with men found to experience more negative mental health outcomes as a result of receiving unwanted sexts (Klettke et al., 2019), while women experienced greater emotional distress as a result of pressured sexting (Wachs et al., 2021).

Finally, to our knowledge, no empirical research currently exists on the receiving of unsolicited sexts via AirDrop. It is important to consider the experiences of victims who receive unsolicited sexts via AirDrop, given that sexts can be anonymously exchanged through AirDrop only if the devices are physically close (i.e., within 30 feet, (Freeman, 2020), indicating a level of proximity between the perpetrator and victim. Knowing a perpetrator is physically close but being

unable to identify them could be an aggravating factor for victims; thus, a better understanding of proximate IBSA victimization is warranted. One study on cyber-flashing law reform places receiving unsolicited sexts via AirDrop as a gendered experience, with men acting primarily as perpetrators and women as victims (McGlynn & Johnson, 2021). Given that victimization in cyberbullying and IBSA instances are gendered, associations between the two phenomena may likewise differ between genders. A better understanding of these differences would assist with the development of future gender-based cyberbullying prevention programs.

Current Research

The objective of this study was to examine cisgendered differences in predictors for cyberbullying victimization. Based on previous literature, we expect sext sending and receiving to be significantly associated with cyberbullying victimization for both men and women (Hypothesis 1); however, that association would be better accounted for by IBSA victimization (Hypothesis 2). Concerning gender differences, based on prior findings surrounding the consequences of IBSA, we expected being a victim of non-consensual sext dissemination and pressured sexting to be more strongly associated with cyberbullying victimization for women, while receiving unwanted sexts would have a greater association with cyberbullying victimization for men (Hypothesis 3). Due to the paucity of research exploring the receiving of unsolicited sexts via AirDrop, no *a priori* hypothesis was developed. Finally, given that prior research found men were more likely to exhibit cyberbullying behaviour as a result of cyberbullying victimization (Cunningham et al., 2015; Hemphill & Heerde, 2014; Orel et al., 2017; Zsila et al., 2019), we hypothesised that cyberbullying perpetration would have a stronger association with cyberbullying victimization for men compared to women (Hypothesis 4).

Method

Participants

An initial sample of 2828 participants commenced the survey. Given the substantial number of binary items in the survey (e.g., sext sending), a large number of participants with incomplete responses resistant to imputation were excluded ($N = 1012$). Participants outside the age inclusion criteria were also excluded ($N = 101$), as were those identifying as gender diverse, due to insufficient sample size and the study's focus on cis-gendered adults ($N = 33$), which resulted in a final sample of 1682 young

adults (47.3% men, 52.7% women). Eligible participants were 18–30 years old, with a mean age of 23.15 years ($SD = 3.23$). Most participants reported being sexually active (76.4%) with the average age of sexual activity being 17.32 years ($SD = 2.4$). Regarding sexual orientation, 75.6% identified themselves as being Heterosexual, 14.9% as Bisexual, 4.3% as Lesbian/Gay, 2.9% as Uncertain, and 2.3% as Other or unwilling to disclose. Concerning educational attainment, 37.7% achieved a Bachelor's degree, 30.8% Year 12 or equivalent (i.e., end of secondary education), 13.5% Postgraduate Degree, 6.6% Certificate level, and 6.1% Advanced Diploma/Diploma. Most participants were from Australia (77.2%), followed by United Kingdom (9.9%), USA (5.0%), Other Country (5.0%), and New Zealand (2.9%). Concerning ethnicity, 48.9% were Australian, 20.8% were British or European, 15.6% were Asian, and 14.7% endorsed another ethnicity.

Procedure

This study was approved by Deakin University's Human Research Ethics Committee (DUHREC). Before participants commenced the voluntary, confidential survey, general study aims were outlined via a plain language statement. Participants provided informed consent before they commenced the survey, which took approximately 20–25 min to complete. Overall, 1204 participants (71.6%) were recruited via social media, while 478 participants (28.4%) were recruited through survey aggregator Prolific to produce a more gender-balanced sample. No incentive was offered for social media participants, while Prolific participants received a minor financial reimbursement.

Prolific participants were, on average, older than social media participants (*Prolific* $M = 24.3$, $SD = 3.54$, *social media* $M = 22.70$, $SD = 2.98$; $t(1680) = 9.38$, $p < .001$), more likely to be men (*Prolific* 95.4%, *social media* 28.2%, $\chi^2(1) = 620.67$, $p < .001$), and engage in cyberbullying (*Prolific* 39.5%, *social media* 31.4%, $\chi^2(1) = 10.16$, $p < .001$). Social media participants were more likely to be sexually active (*Prolific* 68.1%, *social media* 79.7%, $\chi^2(1) = 25.12$, $p < .001$), send sexts (*Prolific* 52.1%, *social media* 74.7%, $\chi^2(1) = 80.48$, $p < .001$), receive sexts (*Prolific* 71.8%, *social media* 84.3%, $\chi^2(1) = 34.62$, $p < .001$), received unwanted sexts (*Prolific* 19.2%, *social media* 50.8%, $\chi^2(1) = 140.25$, $p < .001$), send sexts under pressure (*Prolific* 16.7%, *social media* 38.0%, $\chi^2(1) = 70.89$, $p < .001$), and be victims of non-consensual sext dissemination (*Prolific* 5.6%, *social media* 11.5%, $\chi^2(1) = 13.37$, $p < .001$). There was no significant difference between Prolific and social media participants

concerning cyberbullying victimization (*Prolific* 69.2%, *social media* 67.4%, $\chi^2(1) = 0.56$, $p = .45$), and receiving unsolicited sexts via AirDrop (*Prolific* 6.7%, *social media* 7.4%, $\chi^2(1) = 0.25$, $p = .62$).

Measures

The Internet Harassment Survey (Ybarra et al., 2007) includes questions on how many times a participant experienced cyberbullying perpetration or victimization in the past year. The questionnaire consisted of three items on cyberbullying victimization (e.g., *Receive rude or nasty comments from someone while online*) and three items on cyberbullying (e.g., *Spread rumours about someone online*). Items were rated on a frequency scale: *everyday/almost every day; once or twice a week; once or twice a month; a few times a year; less than a few times a year; never*. Participants who reported experiencing cyberbullying perpetration or victimization in the past year were coded as being perpetrators or victims, respectively. In this sample, the Cronbach's alpha was 0.78 for victimization and 0.75 for perpetration, consistent with prior validation efforts (Ybarra et al., 2007).

The Sexting Behaviours Questionnaire was used to explore sexting behaviours among young adults (Clancy et al., 2021). For the purposes of this study, sexts were defined as “sexually explicit images, sent, received or shared via mobile phone messaging or apps”. Participants were asked whether they had experienced or engaged in the following behaviours (*Yes/No*): sent sexts “Have you ever sent an image-based sext of yourself?”; received sexts “Have you ever received an image-based sext?”; received unwanted sexts “Have you ever received an image-based sext that was unwanted/unwelcome?”; pressured sexting “Have you felt pressure to send an image-based sext? If yes, as a result of that pressure, did you send an image-based sext?”; received unsolicited sexts via AirDrop “Have you ever been airdropped a sexually explicit image without your consent?”; and non-consensual sext dissemination victimization “Have you ever sent an image-based sext of yourself that was subsequently forwarded (to your knowledge)? Had you given permission for this image to be forwarded?”.

Analyses

IBM SPSS Statistics 28.0 was used to conduct relevant statistical analyses for the study. Descriptive and chi-square analysis enabled review of sample characteristics by gender. Bivariate correlational analysis tested the association between measured variables for men and women. Only variables significantly correlated with cyberbullying victimization were included in subsequent stepwise logistical regressions to examine gender differences in associations.

Results

Descriptive statistics for study variables examined by gender are shown in Table 1. Men were significantly more likely to engage in cyberbullying perpetration and experience cyberbullying victimization, while women were significantly more likely to send and receive sexts, sext under pressure, receive unwanted sexts, and be victims of non-consensual sext dissemination. Men and women did not significantly differ in regard to receiving unsolicited sexts via AirDrop.

Correlations

Bivariate correlations were conducted separately for men and women. Correlation analyses for men found cyberbullying victimization to be significantly associated with all variables other than sext sending/receiving; detailed findings are presented in Table 2. In contrast, correlation analysis for women found all predictor variables to be associated with cyberbullying victimization, as detailed in Table 3.

Table 1 Key variables by gender

Variable	Full sample (<i>N</i> = 1682)	Men (<i>n</i> = 795)	Women (<i>n</i> = 887)	Comparison, men to women
Sent Sext	68.3%	60.3%	75.4%	$\chi^2(1) = 44.54, p < .001$
Received Sext	80.7%	76.7%	84.3%	$\chi^2(1) = 15.57, p < .001$
Pressured Sexting*	46.9%	31.5%	57.8%	$\chi^2(1) = 77.68, p < .001$
Received Unwanted Sext**	51.8%	26.2%	72.7%	$\chi^2(1) = 290.97, p < .001$
Airdropped Sext Without Consent	7.2%	6.7%	7.7%	$\chi^2(1) = 0.63, p = .428$
Non-Consensual Dissemination Victim	9.9%	7.2%	12.3%	$\chi^2(1) = 12.35, p < .001$
Cyberbullying Perpetrator	33.7%	42.3%	27.0%	$\chi^2(1) = 49.37, p < .001$
Cyberbullying Victim	67.9%	71.9%	64.3%	$\chi^2(1) = 11.37, p < .001$

* = % provided based on those who sent sexts (*N* = 1148), ** = % provided based on those who received sexts (*N* = 1358)

Table 2 Correlations for key variables by gender (men)

Variables	Age	Sent Sext	Received Sext	Pressured Sexting	Received Unwanted Sext	Airdropped Sext Without Consent	Non-Consensual Dissemination Victim	Cyberbullying Perpetrator	Cyberbully Victim
Age	1	—							
Sent Sext	0.19	1	—						
Received Sext	.070	.642**	1	—					
Pressured Sexting	-.036	.393**	.267**	1	—				
Received Unwanted Sext	-.025	.199**	.276**	.213**	1	—			
Airdropped Sext Without Consent	-.073*	.001	.052	.076*	.168**	1	—		
Non-Consensual Dissemination Victim	-.009	.226**	.153**	.325**	.213**	.063	1	—	
Cyberbullying Perpetrator	-.177**	.008	.043	.138**	.079*	.118**	.108**	1	—
Cyberbully Victim	-.148**	.014	.067	.152**	.111**	.144**	.098**	.472**	1

* $p < .05$, ** $p < .01$

Table 3 Correlations for key variables by gender (women)

Variables	Age	Sent Sext	Received Sext	Pressured Sexting	Received Unwanted Sext	Airdropped Sext Without Consent	Non-Consensual Dissemination Victim	Cyberbullying Perpetrator	Cyberbully Victim
Age	1	—							
Sent Sext	0.10	1	—						
Received Sext	-.038	.618**	1	—					
Pressured Sexting	-.106**	.501**	.353**	1	—				
Received Unwanted Sext	-.101**	.262**	.543**	.351**	1	—			
Airdropped Sext Without Consent	-.051	-.003	.019	.063*	.081*	1	—		
Non-Consensual Dissemination Victim	-.048	.198**	.152**	.274**	.220**	.137**	1	—	
Cyberbullying Perpetrator	-.075*	.112**	.100**	.137**	.112*	.090**	.114**	1	—
Cyberbully Victim	-.129**	.082*	.132**	.161**	.253**	.082*	.179**	.362**	1

* $p < .05$, ** $p < .01$ **Table 4** Stepwise logistic regression results regarding cyberbullying victimization (men)

Variable	95% CI			Exp(B)	Lower	Higher	$R^2_{\text{Nagelkerke}}$	R^2_{Change}
	B	df	p					
Step 1							.031	.031**
Step 2							.106	.075**
Step 3							.377	.271**
Constant	1.07	1	.124	2.91	-	-		
Age	-0.05	1	.095	0.95	0.90	1.01		
Pressured Sexting	0.61	1	.032	1.85	1.05	3.24		
Received Unwanted Sext	0.36	1	.164	1.43	0.86	2.39		
Received Unsolicited Airdropped Sext	1.96	1	.009	7.11	1.63	31.10		
Non-Consensual Sext Dissemination	0.47	1	.321	1.61	0.63	4.09		
Cyberbully Perpetration	3.10	1	<.001	22.24	11.81	41.91		

** $p < 0.01$

Stepwise Logistic Regression

Separate stepwise logistic regressions were conducted for men (Table 4) and women (Table 5), with cyberbullying victimization as the dependent variable. Predictor variables included age, sext-sending, sexts-receiving, pressured sexting, receiving unwanted sexts, receiving unsolicited sexts via AirDrop, non-consensual sext dissemination victimization, and cyberbullying. Only variables significantly associated with cyberbullying victimization in prior bivariate correlations were included in each regression.

Regression Results for Men

Concerning stepwise logistical regression findings for men ($N = 795$), age was included as a demographic variable at Step 1. The model at Step 1 was significant, $\chi^2(1) = 17.33$, $p < .001$, and accounted for 3.1% ($R^2_{\text{Nagelkerke}} = .031$) of variance in cyberbullying victimization. At Step 2, unwanted and non-consensual sexting behaviours were added, specifically pressured sexting, receiving unwanted sexts, receiving unsolicited sexts via AirDrop, and non-consensual sext dissemination victimization. The model

Table 5 Stepwise logistic regression results regarding cyberbullying victimization (women)

Variable	95% CI			Exp(B)	Lower	Higher	$R^2_{\text{Nagelkerke}}$	R^2_{Change}
	B	df	p					
Step 1							.022	.022**
Step 2							.044	.022**
Step 3							.131	.087**
Step 4							.289	.158**
Constant	1.30	1	.042	3.67	-	-		
Age	-0.071	1	.008	0.93	0.88	0.98		
Sent Sext	-0.11	1	.666	0.89	0.53	1.46		
Received Sext	-0.21	1	.492	0.81	0.45	1.47		
Pressured Sexting	0.14		.469	1.15	0.79	1.69		
Received Sext Unwanted	0.96	1	<.001	2.62	1.18	3.85		
Received Unsolicited Airdropped Sext	0.29	1	.389	1.34	0.69	2.61		
Non-Consensual Sext Dissemination	1.06	1	.001	2.87	1.53	5.40		
Cyberbully Perpetration	2.46	1	<.001	11.65	6.66	20.36		

** $p < 0.01$

at Step 2 was significant, $\chi^2(5) = 60.87$, $p < .001$, and explained 10.6% ($R^2_{\text{Nagelkerke}} = .106$) of variance in cyberbullying victimization. Step 3 included cyberbully perpetration as a predictor variable. The model at Step 3 was significant, $\chi^2(6) = 241.59$, $p < .001$, and explained 37.7% ($R^2_{\text{Nagelkerke}} = .377$) of variance in cyberbullying victimization. Cyberbullying perpetration, $\text{Exp}(B) = 22.24$, $p < .001$, was the strongest predictor for victimization, followed by receiving unsolicited sexts via AirDrop, $\text{Exp}(B) = 7.11$, $p = .009$, and pressured sexting, $\text{Exp}(B) = 1.85$, $p = .032$. Age, receiving unwanted sexts, and being a victim of non-consensual sext dissemination did not significantly predict cyberbullying victimization for men.

Regression Results for Women

Reviewing the stepwise logistic regression results for women ($N = 887$), age was included at Step 1. The model at Step 1 was significant, $\chi^2(1) = 14.61$, $p < .001$, and accounted for 2.2% ($R^2_{\text{Nagelkerke}} = .022$) of variance in cyberbullying victimization. General sexting behaviours were added at Step 2, including sext sending and receiving behaviours. The model at Step 2 was significant, $\chi^2(3) = 28.60$, $p < .001$, accounting for 4.4% ($R^2_{\text{Nagelkerke}} = .044$) of variance in cyberbullying victimization. At Step 3, unwanted and non-consensual sexting behaviours including pressured sext sending, receiving unwanted sexts, receiving unsolicited sexts via AirDrop, and non-consensual sext dissemination victimization were included as predictor variables. The model at Step 3 was significant, $\chi^2(7) = 88.73$, $p < .001$, and

accounted for 13.1% ($R^2_{\text{Nagelkerke}} = .131$) of variance in cyberbullying victimization. Cyberbullying perpetration was included in Step 4. The model at Step 4 was significant, $\chi^2(8) = 209.42$, $p < .001$, and explained 28.9% ($R^2_{\text{Nagelkerke}} = .289$) of variance in cyberbullying victimization. Cyberbullying perpetration was the strongest predictor of cyberbullying victimization, $\text{Exp}(B) = 11.65$, $p < .001$, followed by being a victim of non-consensual sext dissemination, $\text{Exp}(B) = 2.87$, $p = .001$, receiving unwanted sexts, $\text{Exp}(B) = 2.62$, $p < .001$, and age, $\text{Exp}(B) = 0.93$, $p = .008$. Sext sending, sext receiving, pressured sexting, and receiving unsolicited sexts via AirDrop were not significant predictors of cyberbullying victimization for women.

Discussion

Overall, results found significant gender differences in how image-based sexual abuse (IBSA) and cyberbullying predict cyberbullying victimization. Data for this cohort were collected during periods of COVID-19 confinement (2020–2021), during which many nations imposed nationwide lockdowns. This restriction in travel likely led to a number of differences in online behaviour compared to prior research. Specifically, this study found sext sending and receiving to be more common than previously reported (Mori et al., 2020), which is consistent with findings from other studies on sexting during COVID-19 confinement (Bianchi et al., 2021; Maes & Vandenbosch, 2022; Thomas et al., 2022). Further, the present study found

non-consensual sext dissemination to be less common than previously reported in meta-analytic research (Mori et al., 2020). Given that the majority of non-consensual sharing of intimate images occurs via physical means (Walker et al., 2021), Covid limitations on travel may have inadvertently reduced opportunities for non-consensual sext dissemination.

In general, women were more likely to experience IBSA victimization compared to men; however, we observed no gender differences in the likelihood of receiving unsolicited sexts via AirDrop. A possible reason is that AirDropped sexts can be distributed by perpetrators without knowing who receives it, as senders and receivers cannot be identified by the name of the device chosen by the user (Freeman, 2020). Therefore, victims are likely being indiscriminately targeted in public areas, thus challenging the predominant female-victim narrative (Freeman, 2020; McGlynn & Johnson, 2021).

Correlational findings showed that sexting behaviours were associated with cyberbullying victimization for women, though not for men. Given IBSA victimization is more common in women for this cohort, this was expected, as women who are victims of IBSA are more likely to experience cyberbullying (Gámez-Guadix et al., 2022; Ojeda et al., 2019). This supports previous research on the role of consent in delineating between healthy and harmful sexting behaviours (Cornelius et al., 2020; Klettke et al., 2019; Wachs et al., 2021). Further, in support of our hypothesis and results from prior research (Gámez-Guadix et al., 2022; Ojeda et al., 2019), the association between sext sending/receiving and cyberbullying victimization in women was largely accounted for by IBSA victimization.

Regarding gender differences in the relationship between IBSA and cyberbullying victimization, as expected, there were substantial differences in how IBSA predicted cyberbullying victimization for men and women. Non-consensual sext dissemination significantly predicted cyberbullying victimization for women, though not for men, which could suggest the presence of double standards when it comes to the socio-cultural expectations around sexual behaviour (Endendijk et al., 2020). Women are perceived to experience more reputational damage as victims of non-consensual dissemination, making them more vulnerable to subsequent cyberbullying. As with other forms of harassment, such as slut-shaming, stalking, and intimate-partner abuse (McGlynn et al., 2021; Naezer & van Oosterhout, 2021; Powell et al., 2020), cyberbullying victimization could be a secondary consequence of non-consensual sext dissemination for women.

The receiving of unwanted sexts was also significantly associated with cyberbullying victimization for women, though not for men. This was unexpected, given prior research found men who received unwanted sexts

experienced greater psychological distress compared to women (Klettke et al., 2019). Expectations and associated behaviours surrounding unwanted sexting could explain the gendered association between unwanted sexting and cyberbullying victimization. For example, women are expected to be more receptive to sexual advances (Burkett, 2015; Endendijk et al., 2020); thus, cyberbullying may occur within the context of unmet expectations when it comes to unwanted sexting. Future studies could explore this possibility by examining gender differences in perpetrator motivations and expectations behind the sending of unwanted sexts.

Regarding the association between pressured sexting and cyberbullying victimization, although women are more likely to send sexts under pressure, men who are victims of pressured sexting are more likely to experience cyberbullying victimization. This finding suggests that men and women may experience different forms of pressured sexting. Prior research found victims can experience pressures to sext from the recipient, peers, and digital media (Burkett, 2015; Walker et al., 2021; Walker et al., 2013). Sexualized media culture disproportionality targets and encourages women to expose and share intimate media of themselves (Burkett, 2015). Additionally, women experience more social pressure around sexting (Walker et al., 2021). Consequently, this normalization of exposure could result in a lower level of individual pressure needed to encourage women to sext. In contrast, men could experience greater levels of individual pressure to sext, which may take the form of pernicious behaviour, including extortion, threats, or cyberbullying. Future research should explore gender difference in the ways pressured sexting may occur (e.g., blackmail, extortion, digital media).

As previously mentioned, unsolicited sext sharing via AirDrop can be considered an indiscriminate form of IBSA, affecting men and women at similar rates. However, interestingly, we found that receiving unsolicited sexts via AirDrop significantly predicted cyberbullying victimization for men, but not for women. This suggests that while men and women experience similar rates of unsolicited sexts, the impact of these experiences differs across genders. It is possible that exposure to one form of cyber-abuse can inoculate women to other forms of online harassment due to their more commonly endorsed coping strategies. Research into coping strategies utilized in response to cyberbullying (Orel et al., 2017; Price & Dalgleish, 2010; Ronis & Slaunwhite, 2019) found that women were more likely to engage in help-seeking behaviours (e.g., seeking support from family, teachers, or friends) and blocking behaviours (e.g., ignoring or blocking the perpetrator). Men, on the other hand, were more likely to endorse retaliatory behaviour (e.g., encouraging friends to cyberbully the initial perpetrator). Help-seeking behaviours, in particular, have

been found to be effective in curtailing harassment, while retaliatory behaviour has been found to be ineffective in ameliorating abuse (Fox & Tang, 2017; Orel et al., 2017; Price & Dalgleish, 2010; Ronis & Slaunwhite, 2019). Prior experience with cyber-abuse could encourage women to adopt constructive coping strategies; thus, women who experience cyberbullying victimization are less likely to receive unwanted sexts via AirDrop, and vice versa. In contrast, men may remain susceptible to various forms of online abuse even after initial exposure.

As expected, cyberbullying perpetration was significantly associated with cyberbullying victimization for both genders. In line with prior research findings (Dou et al., 2020; Hemphill & Heerde, 2014; Roberto et al., 2014), current research indicate that cyberbullying victims can become perpetrators through retaliatory behaviour or to redirect their feelings from being bullied themselves, while perpetrators may in turn be victimized through retaliation by their victims. Concerning gender differences, the association between cyberbullying and cyberbullying victimization was stronger for men in comparison to women. This was expected, given prior findings that men are more likely than women to endorse retaliatory coping strategies (Orel et al., 2017; Ronis & Slaunwhite, 2019). Future prevention programs should incorporate education on effective coping strategies and discourage retaliatory behaviour, especially for men, to restrict the cycle of abusive behaviour. This could include school-based programs which promote respectful behaviours and seek to address gender-based violence, such as Respectful Relationships Education (RRE) which is embedded within Australian schools at primary and secondary levels. Additionally, approaches which seek to embed aligned content within higher education settings (e.g. Respect at Uni, Burge, 2024) or community and culturally based programs (Keddie et al., 2021) may offer other opportunities to integrate cyberbullying education within broader frameworks that seek to prevent gender-based violence.

Limitations

Important limitations in the present study should be noted. Given that we utilized a cross-sectional design, caution is encouraged when establishing causation between variables. While non-consensual and unwanted sexting experiences may predispose individuals to becoming victims of cyberbullying, the association may be bidirectional or reciprocal. Future longitudinal research should clarify the temporal order of these associations and/or explore the possibility of a bidirectional relationship between IBSA and cyberbullying victimization. Additionally, this study used data from an online convenience sample during periods of

COVID-19 confinement, thus limiting the generalisability of findings. Further, though anonymity of responses was emphasized to participants, there remains the possibility that socially undesirable behaviours such as cyberbullying and non-consensual sexting behaviours went underreported. Finally, the data utilized in this study was quantitative and offered little efficacy in detailing the nuanced victim experience, such as forms of sexting pressure or the emotional impact of victimization. Future studies may utilize mixed methods or qualitative design (e.g., interviews) to better understand IBSA and cyberbullying victimization.

Conclusion

The current study investigated gendered differences in the association between cyberbullying, image-based sexual abuse (IBSA), and cyberbullying victimization. We found that the influence of sext sending/receiving on cyberbullying victimization could be largely accounted for by IBSA behaviours. Within these behaviours, being a victim of non-consensual dissemination and unwanted sexting was significantly associated with cyberbullying victimization for women but not for men. Further, being a victim of pressured sexting or receiving unsolicited sexts via Airdrop placed men at a higher risk of being a victim of cyberbullying, while not having the same effect for women. Finally, cyberbullying perpetration was significantly associated with cyberbullying victimization for both genders but had a substantially stronger association for men. Findings from the current study suggest gender interactions between IBSA victim experiences and cyberbullying victimization necessitate a nuanced approach. Notably, there is a significant difference in how men and women are affected by different forms of non-consensual and unwanted sexting behaviours. These differences could be moderated by the social environment in which the behaviour occurred, and coping methods utilized by the victim. Future research should examine how these moderative effects occur, while gender-based prevention programs should acknowledge gendered differences in victim experiences and target IBSA behaviours relevant to their gender.

Author Contribution B.K. and E.C. were responsible for Research design and conceptualisation, data oversight and research management, supervision, and reviewing the manuscript. Y.H was responsible for data analysis and initial drafting of the paper.

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Data Availability No datasets were generated or analysed during the current study.

Declarations

Ethics Approval Ethical approval for this study was provided by Deakin University's Human Research Ethics Committee. We have also provided a copy of the Plain Language Statement and Consent form, which notes that aggregated data could be used for publication.

Consent for Publication All authors consent to the submission of this paper. Consent was provided by participants as noted in the PLS referenced above both for data collection and publication of aggregated results arising from the publication.

Competing interests The authors declare no competing interests.

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